GLOSSARY

Section I
Abbreviations

AEDA ..... Ammunition, Explosives, and Dangerous Articles
ANSI ..... American National Standards Institute
AR ..... Army Regulation
ASSHP ..... Abbreviated Site Safety and Health Plan
ATF ..... Alcohol, Tobacco, and Firearms
BRAC ..... Base Realignment and Closure
CAIS ..... Chemical Agent Identification Set
CEMP-RA ..... Directorate of Military Programs, Executive Office, Program Resources Branch
CERCLA ..... Comprehensive Environmental Response, Compensation, and Liability Act
CFR ..... Code of Federal Regulations
CPR ..... Cardiopulmonary Resuscitation
CWM ..... Chemical Warfare Materiel
DA ..... Department of the Army
DA Pam ..... Department of Army Pamphlet
DDESB ..... Department of Defense Explosives Safety Board
DOD ..... Department of Defense
DOT ..... Department of Transportation
DPT ..... Direct Push Technology
EED ..... Electroexplosive Device
EM ..... Engineer Manual
EMM ..... Earth-Moving Machinery
EMR ..... Electromagnetic Radiation
EOD ..... Explosives Ordnance Disposal
EP ..... Engineer Pamphlet
EPA ..... Environmental Protection Agency
ER ..... Engineer Regulation
ESP ..... Explosives Siting Plan
ESS ..... Explosives Safety Submission
FDEM ..... Frequency Domain Electromagnetics
FUDS ..... Formerly Used Defense Site
HD ..... Hazard Division
HERO ..... Hazards of Electromagnetic Radiation to Ordnance
HQUSACE ..... Headquarters, U.S. Army Corps of Engineers
HTRW ..... Hazardous, Toxic, and Radioactive Waste
IDO ..... Indefinite Delivery Order
IDW ..... Investigation Derived Waste
IGE ..... Independent Government Estimate

IRP ..... Installation Restoration Program
MCACES ..... Micro Computer-Aided Cost Engineering System
MCX ..... Mandatory Center of Expertise
MOA ..... Memorandum of Agreement
MPM ..... Most Probable Munition
MSC ..... Major Subordinate Command
NCP ..... National Contingency Plan
NEW ..... Net Explosive Weight
OB/OD ..... Open Burn/Open Detonation
OE ..... Ordnance and Explosives
OSHA ..... Occupational Safety and Health Administration
PM ..... Project Manager
POC ..... Point of Contact
PPE ..... Personal Protective Equipment
PVC ..... Polyvinyl Chloride
QA ..... Quality Assurance
QC ..... Quality Control
Q-D ..... Quantity-Distance
QCP ..... Quality Control Plan
RACER ..... Remedial Action Cost Engineering and Requirements System
RF ..... Radio Frequency Range
SFO ..... Support for Others
SOW ..... Statement of Work
SSHO ..... Site Safety and Health Officer
SSHP ..... Site Safety and Health Plan
SUXOS ..... Senior UXO Supervisor
TB ..... Technical Bulletin
TDEM ..... Time Domain Conductivity Electromagnetics
TEU ..... Technical Escort Unit
TM ..... Technical Manual
TSD ..... Team Separation Distance
USACE ..... U.S. Army Corps of Engineers
USAESCH ..... U.S. Army Engineering and Support Center, Huntsville
USASC ..... U.S. Army Safety Center
USATCES ..... U.S. Army Technical Center for Explosives Safety
UXO ..... Unexploded Ordnance
UXOSO ..... UXO Safety Officer
UXOQCS ..... UXO Quality Control Specialist

Section II
Terms

Active Installations
Installations under the custody and control of DOD. Includes operating installations, installations in a standby or layaway status, and installations awaiting closure under the Base Realignment and Closure (BRAC) legislation. (EP 1110-1-18)

Active Range
A military range that is currently in service and is being regularly used for range activities. (40 CFR 266.201)

Anomaly
Any item that is seen as a subsurface irregularity after geophysical investigation. This irregularity should deviate from the expected subsurface ferrous and non-ferrous material at a site (i.e., pipes, power lines, etc.). (EP 1110-1-18)

Anomaly Avoidance
Techniques employed by EOD or UXO personnel at sites with known or suspected OE to avoid any potential surface UXO and any subsurface anomalies. This usually occurs at mixed hazard sites when HTRW investigations must occur prior to execution of an OE removal action. Intrusive anomaly investigation is not authorized during ordnance avoidance operations. (ER 1110-1-8153)

Chemical Warfare Materiel
An item configured as a munition containing a chemical substance that is intended to kill, seriously injure, or incapacitate a person through its physiological effects. Also includes V- and G- series nerve agent, H- series blister agent, and lewisite in other- than-munition configurations. Due to their hazards, prevalence, and military-unique application, chemical agent identification sets (CAIS) are also considered CWM. CWM does not include: riot control agents, chemical herbicides; smoke and flame producing items; or soil, water, debris, or other media contaminated with chemical agent. (HQDA Interim Guidance for Biological Warfare Materiel and Non-Stockpile Chemical Warfare Materiel Response Activities)

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)
CERCLA authorizes federal action to respond to the release or threatened release of hazardous substances into the environment or a release or threat of release of a pollutant or contaminant into the environment that may present an imminent or substantial danger to public health or welfare. (EP 1110-1-18)

Construction Support
Support provided by qualified UXO personnel during construction activities at potential OE sites to ensure the safety of construction personnel from the harmful effects of UXO. When a determination is made that the probability of encountering UXO is low (current or previous land

use leads to an initial determination that UXO may be present), a two person UXO team will stand by in case the construction contractor encounters a suspected UXO. When a determination is made that the probability of encountering a UXO is moderate to high (current or previous land use leads to a determination that OE was employed or disposed of in the parcel of concern, e.g., open burn and open detonation areas), UXO teams are required to conduct subsurface UXO clearance for the known construction footprint either in conjunction with the construction contractor or prior to construction. The level of effort will be determined on a case-by-case basis in coordination with the OE MCX. (ER 1110-1-8153)

Conventional Ordnance and Explosives
Ordnance and explosives (see definition) other than CWM, BWM, and nuclear ordnance. (ER 1110-1-8153)

Design Center
A specified USACE field office assigned a singular technical mission that is permanent and USACE-wide in scope. The designated office is to be considered the "lead activity" in a specialized area where capability needs to be concentrated for maximum effectiveness, economy, and efficiency. The OE Design Center (in coordination with the PM) will execute all phases of the OE response project after the approval of the INPR unless the removal action is transferred to an approved district. Only the USAESCH OE Design Center is authorized to execute any phase of a Non-Stockpile CWM response. (ER 1110-1-8153)

Districts Approved to Execute OE Removal Actions
These districts are selected and approved by the MSC Commander with concurrence from the OE MCX, trained, and assigned the mission of conducting OE removal actions. The districts are responsible for final removal action execution. (ER 1110-1-8153)

Exclusion Zone
A safety zone established around an OE work area. Only project personnel and authorized, escorted visitors are allowed within the exclusion zone. Examples of exclusion zones are safety zones around OE intrusive activities and safety zones where OE is intentionally detonated. (DDESB-KO, 27 January 1990)

Explosive Ordnance Disposal (EOD)
The detection, identification, field evaluation, rendering safe, recovery and final disposal of UXO or munitions. (EP 1110-1-18)

EOD Personnel
Active duty military personnel who perform EOD operations.

Explosives Safety Submission (ESS)
The document which serves as the specifications for conducting work activities at the project. The ESS details the scope of the project, the planned work activities, and potential hazards (including the maximum credible event) and the methods for their control. (EP 1110-1-18)

Explosive Soil
Explosive soil refers to mixtures of explosives in soil, sand, clay, or other solid media at concentrations such that the mixture itself is explosive.

(a) The concentration of a particular explosive in soil necessary to present an explosion hazard depends on whether the particular explosive is classified as "primary" or "secondary." Guidance on whether an explosive is classified as "primary" or "secondary" can be obtained from the OE MCX or Chapters 7 and 8 of TM 9-1300-214, Military Explosives.

(b) Primary explosives are those extremely sensitive explosives (or mixtures thereof) that are used in primers, detonators, and blasting caps. They are easily detonated by heat, sparks, impact, or friction. Examples of primary explosives include Lead Azide, Lead Styphnate, and Mercury Fulminate.

(c) Secondary explosives are bursting and boostering explosives (i.e., they are used as the main bursting charge or as the booster that sets off the main bursting charge). Secondary explosives are much less sensitive than primary explosives. They are less likely to detonate if struck or when exposed to friction or to electrical sparks. Examples of secondary explosives include Trinitrotoluene (TNT), Composition B, and Ammonium Picrate (Explosive D).

(d) Soil containing 10 percent or more by weight of any secondary explosive or mixture of secondary explosives is considered "explosive soil." This determination was based on information provided by the USAEC as a result of studies conducted and reported in USAEC Report AMXTH-TE-CR 86096.

(e) Soil containing propellants (as opposed to primary or secondary high explosives) may also present explosion hazards. (ER 1110-1-8153)

Formerly Used Defense Sites (FUDS)
FUDS include those properties previously owned, leased, or otherwise possessed by the U.S. and under the jurisdiction of the Secretary of Defense; or manufacturing facilities for which real property accountability rested with DOD but were operated by contractors (Government owned - contractor operated) and which were later legally disposed of. FUDS is a subprogram of the DERP. Restoration of military land was extended to formerly used sites in 1983 under Public Law 98-212 (DOD Appropriations Act of FY84).

Geophysical Techniques
Techniques utilized for the detection and measurement of buried anomalies (e.g., ferromagnetic indicators and ground penetrating radar) to investigate the presence of munitions. (EP 1110-1-18)

Hazardous, Toxic and Radioactive Waste (HTRW) Activities
HTRW activities include those activities undertaken for the Environmental Protection Agency's Superfund program, the Defense Environmental Restoration Program (DERP), including Formerly Used Defense Sites (FUDS), and Installation Restoration Program (IRP) sites at active

DOD facilities, HTRW actions associated with Civil Works projects, and any other mission or non-mission work performed for others at HTRW sites. (EP 1110-1-18) For the purposes of UXO support, HTRW activities during the investigative/design phase of a HTRW project on a site with known or suspected UXO require anomaly avoidance procedures. HTRW activities during the remedial action phase (construction) of a HTRW project on a site with known or suspected UXO may require either safety support or subsurface clearance.

Intrusive Activity
An activity which involves or results in the penetration of the ground surface at an area known or suspected to contain OE. Intrusive activities can be of an investigative or removal action nature. (EP 1110-1-18)

Inactive Range
A military range that is not currently being used, but that is still under military control and considered by the military to be a potential range area, and that has not been put to a new use that is incompatible with range activities. (40 CFR 266.201)

Mandatory Center of Expertise
An MCX is a USACE organization approved by HQUSACE as having a unique or exceptional technical capability in a specialized subject area that is critical to other USACE commands. Specific mandatory services to be rendered by an MCX are identified on the MCX's homepage. These services may be reimbursable or centrally funded. The USAESCH is the OE MCX for the USACE. The OE MCX webpage address is http://www.hnd.usace.army.mil/oew. (ER 1110-1-8153)

Military Munitions
All ammunition products and components produced or used by or for the U.S. DOD or the U.S. Armed Services for national defense and security, including military munitions under the control of the DOD, the US Coast Guard, the US DOE, and National Guard personnel. The term military munitions includes: confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries used by DOD components, including bulk explosives and chemical warfare agents, chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, and devices and components thereof. Military munitions do not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components there-of. However, the term does include non-nuclear components of nuclear devices, managed under DOE's nuclear weapons program after all required sanitization operations under the Atomic Energy Act of 1954, as amended, have been completed. (40 CFR 260.10)

Military Range
Designated land and water areas set aside, managed, and used to conduct research on, develop, test, and evaluate military munitions and explosives, other ordnance or weapons systems, or to train military personnel in their use and handling. Ranges include firing lines and positions,

maneuver areas, firing lanes, test pads, detonation pads, impact areas, and buffer zones with restricted access and exclusionary areas. (40 CFR 266.201)

Non-Stockpile Chemical Warfare Materiel
CWM (defined above) that is not included in the chemical stockpile. Non-stockpile CWM is divided into five categories: buried CWM, recovered chemical weapons (items recovered during range clearing operations, from chemical burial sites, and from research and development testing), former chemical weapon production facilities, binary chemical weapons, and miscellaneous CWM (unfilled munitions and devices and equipment specially designed for use directly in connection with employment of chemical weapons). (HQDA Interim Guidance for Biological Warfare Materiel and Non-Stockpile Chemical Warfare Materiel Response Activities)

Ordnance and Explosives
OE consists of either (1) or (2) below:
(1) Ammunition, ammunition components, chemical or biological warfare materiel or explosives that have been abandoned, expelled from demolition pits or burning pads, lost, discarded, buried, or fired. Such ammunition, ammunition components, and explosives are no longer under accountable record control of any DOD organization or activity. (HQDA Policy Memorandum, Explosives Safety Policy for Real Property Containing Conventional OE)
(2) Explosive Soil. See definition under "Explosive Soil." (ER 1110-1-8153)

OE Project Team
The OE Project Team consists of the customer(s), the PM, and multi-disciplined representatives from the technical/functional elements necessary to execute the project. (EP 1110-1-18)

OE Safety Specialist
USACE Personnel, classified as a GS-0018 Safety Specialist, and who is UXO qualified. OE Safety Specialists perform safety, quality assurance and UXO subject matter expert functions for the Government. The Safety Specialist may reside in and report to the construction field office or may reside in the engineering/construction office within the OE Design Center. (ER 1110-1-8153)

Quantity-Distance (Q-D)
The quantity of explosives material and distance separation relationships that provide defined types of protection. These relationships are based on levels of risk considered acceptable for the stipulated exposures and are tabulated in the appropriate Q-D tables provided in DOD 6055.9-STD. Separation distances are not absolute safe distances but are relative protective safe distances. Greater distances than those shown in the Q-D tables shall be used whenever possible. (DOD 6055.9-STD)

Removal Action
The cleanup or removal of OE from the environment to include the disposal of removed materiel. The term includes, in addition, without being limited to, security fencing or other measures to prevent, minimize, or mitigate damage to the public health or welfare or to the environment. (ER 1110-1-8153)

Response Action
Action taken instead of or in addition to a removal action to prevent or minimize the release of OE so it does not cause substantial danger to present or future public health or welfare or the environment. (ER 1110-1-8153)

Senior UXO Supervisor
Supervises all contractor on-site UXO activities. This individual will be a graduate of the U.S. Army Bomb Disposal School, Aberdeen Proving Ground, MD or the U.S. Naval Explosive Ordnance Disposal School, Indian Head, MD. This individual will have combined active duty military EOD and contractor UXO experience, including experience in supervisory positions. Experience in active duty in military EOD units is required. This individual will have documented experience with or specialized training in the type of OE expected to be encountered on the site. (USAESCH OE MCX Personnel and Work Standards for Ordnance Response, 30 July 1996)

Small Arms
Caliber 0.5 and smaller ordnance items. These items rarely contain explosive projectiles and present a very low hazard.

Technical Escort Unit (TEU)
Military chemical agent response unit.

Unexploded Ordnance (UXO)
Military munitions that have been primed, fuzed, armed, or otherwise prepared for action, and have been fired, dropped, launched, projected or placed in such a manner as to constitute a hazard to operations, installation, personnel, or material and remain unexploded either by malfunction, design, or any other cause. (40 CFR 266.201)

UXO Personnel
Contractor personnel who have completed specialized military training in EOD methods and have satisfactorily performed the EOD function while serving in the military. Various grades and contract positions are established based on skills and experience. Check with the OE MCX for current ratings. (ER 1110-1-8153)

UXO Quality Control Specialist
This individual will have the same minimum qualifications as a UXO Technician III. In addition, this individual will have documented Quality Control Training. This individual must be able to fully perform all functions enumerated for UXO Sweep Personnel and UXO Technicians I, II, and III. This individual must have the specific training, knowledge, and experience necessary to implement the contractor's QC plans. In addition, the UXOQCS must have the ability to implement the UXO specific sections of the Quality Control Program for all OE related evolutions; conduct quality control inspections of all UXO and explosives operations for compliance with established procedures; and direct and approve all corrective actions to ensure all OE related work complies with contractual requirements. (EP 1110-1-18)

UXO Qualified Personnel
UXO Personnel that meet the requirements for the positions of UXO Technician II, UXO Technician III, UXO Safety Officer, UXO Quality Control Specialist, and Senior UXO Supervisor.

UXO Safety Officer (UXOSO)
Contractor personnel with the responsibility of enforcing the contractor's SSHP. This individual must therefore be in the field whenever possible to observe operations. This individual will have the same minimum qualifications as the UXO Supervisor. In addition, this individual will have the specific training, knowledge, and experience necessary to implement the SSHP and verify compliance with applicable safety and health requirements. (EP 1110-1-18)

UXO Safety Support
UXO safety support is the level of UXO support required, based on the activities to be performed, when the probability of encountering UXO is low. A minimum of a two-person UXO team will stand by in case the construction contractor encounters suspected UXO. (ER 1110-1-8153)

UXO Technician I
This individual will be a graduate of the EOD Assistant's Course at Redstone Arsenal, AL; Eglin AFB, FL or a DOD certified equivalent course. A UXO Assistant may advance to a UXO Specialist category after obtaining active duty military EOD and contractor UXO experience. A UXO Assistant will not perform UXO procedures without the direct supervision of a UXO Specialist, UXO Supervisor, or Senior UXO Supervisor. (EP 1110-1-18)

UXO Technician II
This individual will be a graduate of the U.S. Army Bomb Disposal School, Aberdeen Proving Ground, MD or U.S. Naval EOD School, Indian Head, MD. The UXO Specialist may be a UXO Assistant with combined military EOD and contractor UXO experience. (EP 1110-1-18)

UXO Technician III
Supervises a UXO team. This individual will be a graduate of the U.S. Army Bomb Disposal School, Aberdeen Proving Ground, MD or the U.S. Naval Explosive Ordnance Disposal School, Indian Head, MD. This individual will have combined active duty military EOD and contractor UXO experience. This individual will have experience in OE clearance operations and supervising personnel. (EP 1110-1-18)